Subject: Re: New package MathTools
Posted by peterh on Sat, 27 Apr 2019 16:35:02 GMT
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Hi Koldo,

I modified the calculation a little bit:

```
 void ResParallel(const doubleUnit &d) {
//  if (val + d.val < 1e-100)
//   throw Exc(t_("Division by zero"));
  if (!(unit.IsEqual(d.unit) || IsNull(unit) || IsNull(d.unit)))
   throw Exc(t_("Units does not match in resistor parallel"));
  if (abs(val*d.val) < 1e-100)
   val = 0.0;
  else
   if (abs(val + d.val) < 1e-100)
    throw Exc(t_("Division by zero"));
   val = val*d.val/(val + d.val);
 }
```

It delivers now these results (which are correct):

1||1 = 0.5
1||0 = 0
0||0 = 0
-2||1 = 2
-1||2 = -2
-1||1 Error Division by zero

Please note, the "parallel" operator is not only useful for electronics.
There are many physic equations where this is useful.
For example, two elastic springs may have the elasticity konstants k1 and k2.

If the springs are in parallel then the total konstant is k1 + k2.
If the springs are in series then the total konstant is k1 || k2.

Some mathematicians might complain, that 0^2 / 0 = 0 is not allowed.
In physics this is allowed because the numbers have dimensions.

0^2 Ohm^2 is in a different dimension as 0^1 Ohm^1.
Ohm^2 and Ohm is as different as m^2 and m^1 and cannot been compared, added or subtracted.
The other point is: there is no absolute zero in physics, there is only zeropoint noise ;)

Therefore this calculation is perfectly legal in physics. ;)

Again, many thanks,

Peter